

# Visual Arts and Design Occupations

## Designers

(O\*NET 34038A, 34038B, 34038C, 34038D, 34038F, 34041, 34044, and 39999H)

### Significant Points

- Four out of 10 designers are self-employed—almost four times the proportion for all professional specialty occupations.
- Creativity is crucial in all design occupations; formal education requirements range from a high school diploma for floral designers to a bachelor's degree for industrial designers.
- Despite projected faster-than-average employment growth, keen competition is expected for most jobs, because many talented individuals are attracted to careers as designers.

### Nature of the Work

Designers are people with a desire to create. They combine practical knowledge with artistic ability to turn abstract ideas into formal designs for the clothes that we wear, the living and office space that we inhabit, and the merchandise that we buy. Designers usually specialize in a particular area of design, such as automobiles, clothing, furniture, home appliances, industrial equipment, interiors of homes or office buildings, movie and theater sets, packaging, or floral arrangements.

The first step in developing a new design or altering an existing one is to determine the needs of the client and the ultimate function for which the design is intended. When creating a design, the designer considers size, shape, weight, color, materials used, cost, ease of use, and safety.

The designer then prepares sketches—by hand or with the aid of a computer—to illustrate the vision for the design. After consulting with the client, an art or design director, or a product development team, the designer creates a detailed design using drawings, a structural model, computer simulations, or a full-scale prototype. Many designers are increasingly using computer-aided design (CAD) tools to create and better visualize the final product. Computer models allow greater ease and flexibility in making changes to a design, thus reducing design costs and cutting the time it takes to deliver a product to market. Industrial designers use computer-aided industrial design (CAID) to create designs and to communicate them to automated production tools.

Designers sometimes supervise assistants who carry out their creations. Designers who run their own businesses also may devote a considerable amount of time to developing new business contacts and to performing administrative tasks, such as reviewing catalogues and ordering samples.

Design encompasses a number of different fields. Many designers specialize in a particular area of design, whereas others work in more than one. *Industrial designers* develop countless manufactured products, including airplanes; cars; home appliances; children's toys; computer equipment; and medical, office, and recreational equipment. They combine artistic talent with research on product use, marketing, materials, and production methods to create the most functional and appealing design and to make the product competitive with others in the marketplace. Most industrial designers concentrate in an area of sub-specialization, such as kitchen appliances.

*Furniture designers* design furniture for manufacture. These designers use their knowledge of design trends, competitors' products, production costs, production capability, and characteristics of a company's market to create home and office furniture that is both functional and attractive. They also may prepare detailed drawings of fixtures, forms, or tools required in the production of furniture. Some furniture designers fashion custom pieces or styles according to a specific period or country. Furniture designers must be strongly involved with the fashion industry and aware of current trends and styles.

*Interior designers* plan the space and furnish the interiors of private homes, public buildings, and commercial or institutional establishments, such as offices, restaurants, hospitals, hotels, and theaters. They also plan the interiors for additions to and renovations of existing structures. Most interior designers specialize, and some further specialize in a related line of work. For example, some may concentrate in residential design, and others may further specialize by focusing on a particular room, such as kitchens or baths. With a client's tastes, needs, and budget in mind, interior designers prepare drawings and specifications for interior construction, furnishings, lighting, and finishes. Increasingly, designers use computers to plan layouts that can be changed easily to include ideas received from the client. Interior designers also design lighting and archi-



*Designers combine practical knowledge with artistic ability to turn abstract ideas into formal designs.*

tectural details, such as crown molding, coordinate colors and select furniture, floor coverings, and curtains. Interior designers must design space to conform to Federal, State, and local laws, including building codes. Design plans for public areas also must meet accessibility standards for the disabled and elderly.

*Set, lighting, and costume designers* create set, lighting, and costume designs for movie, television, and theater productions. They study scripts, confer with directors and other designers, and conduct research to determine the appropriate historical period, fashion and architectural styles.

*Fashion designers* design clothing and accessories. Some high-fashion designers are self-employed and design for individual clients. Other high-fashion designers cater to specialty stores or high fashion department stores. These designers create original garments, as well as follow established fashion trends. Most fashion designers, however, work for apparel manufacturers, adapting designs of men's, women's, and children's fashions for the mass market.

*Textile designers*, using their knowledge of textile materials and fashion trends, design fabric for garments, upholstery, rugs, and other products. Computers are widely used in pattern design and grading; intelligent pattern engineering (IPE) systems enable great automation in generating patterns.

*Floral designers* cut and arrange live, dried, or artificial flowers and foliage into designs, according to the customer's order. They trim flowers and arrange bouquets, sprays, wreaths, dish gardens, and terrariums. They usually work from a written order indicating the occasion, customer preference for color and type of flower, price, and the date, time, and place the floral arrangement or plant is to be ready to be delivered. The variety of duties performed by a floral designer depends on the size of the shop and the number of designers employed. In a small operation, the floral designer may own the shop and do almost everything, from growing and purchasing flowers to keeping financial records.

*Merchandise displayers and window dressers* plan and erect commercial displays, such as those in windows and interiors of retail stores and at trade exhibitions.

### Working Conditions

Working conditions and places of employment vary. Designers employed by manufacturing establishments or design firms generally work regular hours in well-lighted and comfortable settings. Self-employed designers tend to work longer hours.

Designers frequently adjust their workday to suit their clients' schedules, meeting with them during evening or weekend hours, when necessary. Designers may transact business in their own offices, clients' homes or offices, or they may travel to other locations, such as showrooms, design centers, and manufacturing facilities.

Industrial designers usually work regular hours but occasionally work overtime to meet deadlines. In contrast, set, lighting, and costume designers work long and irregular hours, and they often are under pressure to make rapid changes. Fashion designers may work long hours, particularly during production deadlines or before fashion shows, when overtime usually is necessary. In addition, fashion designers may be required to travel to production sites across the United States and overseas. Interior designers generally work under deadlines and may work overtime to finish a job. They regularly carry heavy and bulky sample books to meetings with clients. Floral designers usually work regular hours in a pleasant work environment, except during holidays when overtime usually is required.

All designers face frustration at times, when their designs are rejected or when they cannot be as creative as they wish. Independent consultants, who are paid by the assignment, are under pressure to please clients and to find new ones to maintain an income.

### Employment

Designers held about 423,000 jobs in 1998. Four out of 10 were self-employed.

Designers work in a number of different industries, depending on their design specialty. Most industrial designers, for example, work for engineering or architectural consulting firms or for large corporations. Interior designers usually work for furniture and home furnishings stores, interior designing services, and architectural firms. Many interior designers do freelance work—full time, part time, or in addition to a salaried job in another occupation.

Set, lighting, and costume designers work for theater companies and film and television production companies. Fashion designers generally work for textile, apparel, and pattern manufacturers, or for fashion salons, high-fashion department stores, and specialty shops. Most floral designers work for retail flower shops or in floral departments located inside grocery and department stores.

### Training, Other Qualifications, and Advancement

Creativity is crucial in all design occupations. People in this field must have a strong sense of the aesthetic—an eye for color and detail, a sense of balance and proportion, and an appreciation for beauty. Sketching ability is helpful for most designers, but it is especially important for fashion designers. A good portfolio—a collection of examples of a person's best work—is often the deciding factor in getting a job. Except for floral design, formal preparation in design is necessary.

Educational requirements for entry-level positions vary. Some design occupations, notably industrial design, require a bachelor's degree. Interior designers normally need a college education, in part because few clients—especially commercial clients—are willing to entrust responsibility for designing living and working space to a designer with no formal credentials.

Interior design is the only design field subject to government regulation. According to the American Society for Interior Designers, 21 States and the District of Columbia require interior designers to be licensed. Because licensing is not mandatory in all States, an interior designer's professional standing is important. Membership in a professional association usually requires the completion of 3 or 4 years of postsecondary education in design, at least 2 years of practical experience in the field, and passage of the National Council for Interior Design qualification examination.

In fashion design, employers seek individuals with a 2- or 4-year degree who are knowledgeable in the areas of textiles, fabrics, and ornamentation, as well as trends in the fashion world. Similarly, furniture designers must keep abreast of trends in fashion and style, in addition to methods and tools used in furniture production. Several universities and schools of design offer degrees in furniture design.

Set, lighting, and costume designers typically have college degrees in their particular area of design. A Master of Fine Arts (MFA) degree from an accredited university program further establishes one's design credentials. Membership in the United Scenic Artists, Local 829, is a nationally recognized standard of achievement for scenic designers.

In contrast to the other design occupations, a high school diploma ordinarily suffices for floral design jobs. Most floral designers learn their skills on the job. When employers hire trainees, they generally look for high school graduates who have a flair for color and a desire to learn. Completion of formal training, however, is an asset for floral designers, particularly for advancement to the chief floral designer level. Vocational and technical schools offer programs in floral design, usually lasting less than a year, while 2- and 4-year programs in floriculture, horticulture, floral design, or ornamental horticulture are offered by community and junior colleges, and colleges and universities.

Formal training for some design professions also is available in 2- and 3-year professional schools that award certificates or associate degrees in design. Graduates of 2-year programs normally qualify as assistants to designers. The Bachelor of Fine Arts degree is granted at 4-year colleges and universities. The curriculum in these schools includes art and art history, principles of design, designing and

sketching, and specialized studies for each of the individual design disciplines, such as garment construction, textiles, mechanical and architectural drawing, computerized design, sculpture, architecture, and basic engineering. A liberal arts education, with courses in merchandising, business administration, marketing, and psychology, along with training in art, also is a good background for most design fields. Additionally, persons with training or experience in architecture qualify for some design occupations, particularly interior design.

Computer-aided design (CAD) increasingly is used in all areas of design, except floral design, so many employers expect new designers to be familiar with the use of the computer as a design tool. For example, industrial designers extensively use computers in the aerospace, automotive, and electronics industries. Interior designers use computers to create numerous versions of interior space designs—making it possible for a client to see and choose among several designs; images can be inserted, edited, and replaced easily and without added cost. In furniture design, a chair’s basic shape and structure may be duplicated and updated, by applying new upholstery styles and fabrics with the use of computers.

The National Association of Schools of Art and Design currently accredits about 200 postsecondary institutions with programs in art and design; most of these schools award a degree in art. Some award degrees in industrial, interior, textile, graphic, or fashion design. Many schools do not allow formal entry into a bachelor’s degree program, until a student has finished a year of basic art and design courses successfully. Applicants may be required to submit sketches and other examples of their artistic ability.

The Foundation for Interior Design Education Research also accredits interior design programs and schools. Currently, there are more than 120 accredited programs in the United States and Canada, located in schools of art, architecture, and home economics.

Individuals in the design field must be creative, imaginative, persistent, and able to communicate their ideas in writing, visually, or verbally. Because tastes in style and fashion can change quickly, designers need to be well read, open to new ideas and influences, and quick to react to changing trends. Problem-solving skills and the ability to work independently and under pressure are important traits. People in this field need self-discipline to start projects on their own, to budget their time, and to meet deadlines and production schedules. Good business sense and sales ability also are important, especially for those who freelance or run their own business.

Beginning designers usually receive on-the-job training, and normally need 1 to 3 years of training before they advance to higher-level positions. Experienced designers in large firms may advance to chief designer, design department head, or other supervisory positions. Some designers become teachers in design schools and colleges and universities. Some experienced designers open their own firms.

Job Outlook

Despite projected faster-than-average employment growth, designers in most fields—with the exception of floral and furniture design—are expected to face keen competition for available positions. Many talented individuals are attracted to careers as designers. Individuals with little or no formal education in design, as well as those who lack creativity and perseverance, will find it very difficult to establish and maintain a career in design. Floral design should be the least competitive of all design fields because of the relatively low pay and limited opportunities for advancement, as well as the relatively high job turnover of floral designers in retail flower shops.

Overall, the employment of designers is expected to grow faster than the average for all occupations through the year 2008. In addition to employment growth, many job openings will result from the need to replace designers who leave the field. Increased demand for industrial designers will stem from the continued emphasis on

product quality and safety; the demand for new products that are easy and comfortable to use; the development of high-technology products in medicine, transportation, and other fields; and growing global competition among businesses. Rising demand for professional design of private homes, offices, restaurants and other retail establishments, and institutions that care for the rapidly growing elderly population should spur employment growth of interior designers. Demand for fashion, textile, and furniture designers should remain strong, because many consumers are concerned with fashion and style.

Earnings

Median annual earnings for designers in all specialties except interior design were \$29,200 in 1998. The middle 50 percent earned between \$18,420 and \$43,940. The lowest 10 percent earned less than \$13,780 and the highest 10 percent earned over \$68,310. Median annual earnings in the industries employing the largest numbers of designers, except interior designers, in 1997 were as follows:

Engineering and architectural services .....	\$41,300
Apparel, piece goods, and notions .....	38,400
Mailing, reproduction, and stenographic services .....	36,000
Retail stores, not elsewhere classified .....	16,500

Median annual earnings for interior designers were \$31,760 in 1998. The middle 50 percent earned between \$23,580 and \$42,570. The lowest 10 percent earned less than \$18,360 and the highest 10 percent earned over \$65,810. Median annual earnings in the industries employing the largest numbers of interior designers in 1997 were as follows:

Engineering and architectural services .....	\$33,000
Furniture and home furnishings stores .....	27,800
Miscellaneous business services .....	26,800

Median annual earnings of merchandise displayers and window dressers were \$18,180 in 1998. The lowest 10 percent earned less than \$12,680; the highest 10 percent, over \$28,910.

According to the Industrial Designers Society of America, the average base salary for an industrial designer with 1 to 2 years of experience was about \$31,000 in 1998. Staff designers with 5 years of experience earned \$39,000 whereas senior designers with 8 years of experience earned \$51,000. Industrial designers in managerial or executive positions earned substantially more—up to \$500,000 annually; however, \$75,000 to \$100,000 was more representative.

Related Occupations

Workers in other occupations who design or arrange objects, materials, or interiors to enhance their appearance and function include visual artists, architects, landscape architects, engineers, photographers, and interior decorators. Some computer-related occupations, including Internet page designers and webmasters, require design skills.

Sources of Additional Information

For an order form for a directory of accredited college-level programs in art and design (available for \$15.00) or career information in design occupations, contact:

☛ National Association of Schools of Art and Design, 11250 Roger Bacon Dr., Suite 21, Reston, VA 20190.

For information on careers and a list of academic programs in industrial design, write to:

☛ Industrial Designers Society of America, 1142-E Walker Rd., Great Falls, VA 22066. Internet: <http://www.idsa.org>

For information on degree, continuing education, and licensure programs in interior design, contact:

☛ American Society for Interior Designers, 608 Massachusetts Ave. NE., Washington, DC 20002-6006.

For a list of schools with accredited programs in interior design, contact:

☛ Foundation for Interior Design Education Research, 60 Monroe Center NW., Grand Rapids, MI 49503. Internet: <http://www.fider.org>

For information about careers in floral design, contact:

☛ Society of American Florists, 1601 Duke St., Alexandria, VA 22314.

## Photographers and Camera Operators

(O\*NET 34023A, 34023B, and 34026)

### Significant Points

- A “good eye” with imagination and creativity are essential.
- Only the most skilled and talented who have good business sense maintain a long-term career.
- More than one-half of all photographers and camera operators is self-employed.

### Nature of the Work

Photographers and camera operators produce images that paint a picture, tell a story, or record an event that will be remembered long after the event. Making commercial quality photographs and movies requires technical expertise and creativity. Producing a successful picture includes choosing and presenting a subject to achieve a particular effect and selecting equipment to accomplish the desired goal. For example, photographers and camera operators may enhance the subject’s appearance with lighting or draw attention to a particular aspect of the subject by blurring the background.

Today, many cameras adjust settings like shutter speed and aperture automatically. They also let the photographer adjust these settings manually, thus allowing greater creative and technical control over the picture-taking process. In addition to automatic and manual cameras, photographers and camera operators use an array of film, lenses, and equipment—from filters, tripods, and flash attachments to specially constructed motorized vehicles and lighting equipment.

Photographers use either a traditional camera or a newer digital camera that electronically records images. A traditional camera records images on silver halide film that is developed into prints. Some photographers send their film to laboratories for processing. Color film requires expensive equipment and exacting conditions for correct processing and printing. (See the statement on photographic process workers elsewhere in the *Handbook*.) Other photographers, especially those who use black and white film or require special effects, prefer to develop and print their own photographs. Photographers who do their own film developing must have the technical skill to operate a fully equipped darkroom or the appropriate computer software to be able process prints digitally.

Recent advances in electronic technology now make it possible for the professional photographer to develop standard 35mm or other types of film, and use flatbed scanners and photofinishing laboratories to produce computer-readable, digital images from film. Once the film has been converted to a digital image, a photographer then can edit and electronically transmit the images, making it easier and faster to shoot, develop, and transmit regular film pictures from remote locations.

Although most photographers still use silver-halide film cameras, more are using digital cameras that use electronic memory rather than a film negative to record an image. The electronic image can be transmitted instantly via a computer modem and telephone line or otherwise downloaded onto a personal computer. Then, using the computer and specialized software, the photographer can manipulate and enhance the scanned or digital image to

create a desired effect. The images can be stored on compact disk (CD) the same way as music. Digital technology also allows the production of larger, more colorful, and more accurate prints or images for use in advertising, photographic art, and scientific research. Some photographers use this technology to create electronic portfolios, as well. Because much photography now involves the use of computer technology, photographers must have hands-on knowledge of computer editing software.

Most photographers specialize in portrait, commercial, or news photography. Others specialize in areas such as aerial, police, medical, or scientific photography, which typically requires additional knowledge in areas such as engineering, medicine, biology, or chemistry. A growing group of photographers are providing digital images directly for use on the Internet. Photography is also a fine art medium, and a small portion of photographers sell their photographs as artwork. In addition to technical proficiency, photographic art requires great emphasis on self-expression and creativity.

*Portrait photographers* take pictures of individuals or groups of people and often work in their own studios. Some specialize in weddings or school photographs. Portrait photographers who are business owners arrange for advertising, schedule appointments, set and adjust equipment, develop and retouch negatives, and mount and frame pictures. They also purchase supplies, keep records, bill customers, and may hire and train employees.

*Commercial and industrial photographers* take pictures of various subjects, such as buildings, models, merchandise, artifacts, and landscapes. These photographs are used in a variety of mediums, including books, reports, advertisements, and catalogs. Industrial photographers often take pictures of equipment, machinery, products, workers, and company officials. The pictures then are used for analyzing engineering projects, publicity, or as records of equipment development or deployment, such as placement of an offshore rig. Companies also use these photographs in publications, in reports to stockholders, or to advertise company products or services. This photography frequently is done on location.

*News photographers*, also called photojournalists, photograph newsworthy people; places; and sporting, political, and community events for newspapers, journals, magazines, or television. Some photojournalists are salaried staff; others work independently and are known as freelance photographers.

*Self-employed photographers* may license the use of their photographs through stock photo agencies. These agencies grant magazines and other customers the right to purchase the use of a photograph, and, in turn, pay the photographer on a commission basis. Stock photo agencies require an application from the photographer and a sizable portfolio. Once accepted, a large number of new submissions usually are required from a photographer each year. Photographers frequently have their photos placed on CD’s for this purpose.

Camera operators use motion picture, television, or video cameras to film a wide range of subjects, including commercial motion pictures, documentaries, music videos, news events, and training sessions. Some film private ceremonies and special events. Like photographers, camera operators work in a variety of settings. Many video camera operators are employed by independent television stations, local affiliates, large cable and television networks, or smaller, independent production companies. *Studio camera operators* work in a broadcast studio and usually film their subjects from a fixed position. *News camera operators*, also called *electronic news gathering (ENG) operators*, work as part of a reporting team, following newsworthy events as they unfold. ENG operators may need to edit raw footage on the spot for relay to a television affiliate for broadcast.

Camera operators employed in the entertainment field use motion picture cameras to film movies, television programs, and commercials. Some specialize in filming cartoons or special effects for television and movies. *Television and movie studio camera operators* may be an integral part of the action, using cameras in any of